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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,708	12/21/2005	Winfried Johannes Spickemann	0934-0009	8176
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200 WEST ADAMS STREET				
CHICAGO, IL 60606				
EXAMINER				
KHARE, ATUL P				
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04/19/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/561,708

Applicant(s)

SPICKEMANN ET AL.

Examiner

ATUL KHARE

Art Unit

1742

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 9, 12, 13, 16-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9, 12, 13, 16-19 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/19/11
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed 19 January 2011 has been entered and fully considered.
2. Claims 1-5, 7, 9, 12, 13, 16-19, and 21-23 are currently pending.
3. No new matter has been found.

Claim Objections

4. Claim 1 is objected to because of the following informalities: The phrase "the calcium sulfate dihydrate DSG particles are present" at line 7 should be changed either to "the calcium sulfate dihydrate DSG particles being present" or to "wherein the calcium sulfate dihydrate DSG particles are present". The term "and" should be added to the end of step (b), and the term "and" should be added prior to the term "whereby" at line 15. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5, 7, 9, 12, 13, 16-19, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rennen et al. (EP 0344430) in view of Deleuil (US 4,221,599). For examination, a translation of EP 0344430 will be used.

9. As to claims 1-3, 7, 9, 21, and 23, Rennen teaches a method of preparing gypsum wallboard comprising: combining calcium sulfate hemihydrate (calcined FGD gypsum) with water to form an aqueous slurry (Table, p. 13); adding uncalcined synthetic gypsum particles that are calcium sulfate dihydrate particles of desulfurization

gypsum (p. 6 first and second full paragraphs) to said slurry (p. 12 first full paragraph, p. 14 claim 5), the dihydrate particles being present at up to 20 weight percent (p. 12 first full paragraph, p. 14 claim 5); and discharging the slurry onto a support to form a sheet of gypsum wallboard by setting the slurry (p. 9 second full paragraph, pp. 1-2 continuous manufacturing method), wherein the calcium sulfate dihydrate DSG particles comprise an inert particulate filler which implicitly improves acoustic properties of the wallboard (p. 12 first and second paragraphs).

Rennen does not appear to explicitly disclose the specific surface area of the dihydrate DSG particles, but Rennen teaches a specific surface area of $0.2\text{-}0.65\text{ m}^2/\text{g}$ (which overlaps with the claimed range (MPEP 2144.05(I)) for the calcined hemihydrate gypsum material (p. 13 second full paragraph), and it would have been obvious to utilize this surface area for the dihydrate DSG particles in order to achieve improved water demand and mixing properties prior to discharging the slurry (p. 9 fourth full paragraph). Additionally or alternatively, Deleuil teaches utilizing a specific surface area of $0.1\text{-}0.4\text{ m}^2/\text{g}$ (which overlaps with the claimed range (MPEP 2144.05(I)) for a similar gypsum material in order to readily optimize the required moisture levels in a slurry of the gypsum product (4:19-30), and it would have been obvious to incorporate this surface area into the Rennen method because (a) both Rennen and Deleuil teach that the surface area of gypsum is a result-effective variable which influences moisture demand when forming wallboard materials, or (b) Deleuil establishes that this surface area is conventionally used and is obviously substitutable for the unspecified surface area of the Rennen materials.

Rennen teaches forming a lightweight gypsum board (p. 5 first paragraph).

Rennen does not appear to explicitly disclose the particle size distribution of the dihydrate DSG particles, but Deleuil teaches that the particle size distribution for a similar gypsum material is preferably 20 to 100 microns (which falls within the claimed range (MPEP 2144.05(I)) in order to provide a low apparent density to the final product (4:46-58). It would have been obvious to incorporate the particle size distribution taught by Deleuil into the Rennen method because Rennen already teaches forming a lightweight gypsum board, and the Deleuil teaching would have helped to accomplish this by lowering the density of the final product.

10. As to claim 4, Rennen implicitly teaches the use of a dry dihydrate substance which is combined with calcined gypsum and water to form a slurry (p. 12 first full paragraph, p. 14 claim 5). Alternatively, the desulfurization process implicitly dries the product (p. 6 second full paragraph). Alternatively, Deleuil teaches drying a similar gypsum material prior to making a slurry in order to purify the product (3:56-4:2), and it would have been obvious to incorporate this drying operation into the modified Rennen method in order to purify the gypsum prior to adding it to the slurry.

11. As to claim 5, Rennen does not appear to explicitly disclose mixing water with the dihydrate DSG prior to mixing with the calcined gypsum, but a person having ordinary skill would have found it obvious to rearrangement the process steps already disclosed by modified Rennen in order to accomplish this (MPEP 2144.04(IV)(C)). Additionally or alternatively, Deleuil teaches wetting the gypsum prior to admixing with other components in the case where the gypsum is insufficiently moist, and it would have

been obvious to mix water with Rennin's dihydrate DSG material prior to mixing with calcined gypsum according to this teaching in order to ensure adequate moisture levels.

12. As to claim 12, Rennin teaches that existing gypsum wallboard is crushed to a suitable size and added to the slurry (p. 13 first full paragraph), which implicitly provides additional bulk and improves the acoustic properties of the wallboard.

13. As to claims 13, 16-18, and 22, Rennin teaches forming a gypsum wallboard comprising a cementitious composition, the composition comprising a mixture of calcium sulfate hemihydrate (calcined FGD gypsum), water (Table, p. 13), and uncalcined synthetic gypsum particles that are calcium sulfate dihydrate particles of desulfurization gypsum (p. 6 first and second full paragraphs, p. 12 first full paragraph, p. 14 claim 5), said mixture having been set into gypsum wallboard (pp. 1-2 continuous manufacturing method), the dihydrate particles being present at 20 weight percent (p. 12 first full paragraph, p. 14 claim 5), wherein the calcium sulfate dihydrate DSG particles comprise an inert particulate filler which implicitly improves acoustic properties of the wallboard (p. 12 first and second paragraphs).

Rennin does not appear to explicitly disclose the specific surface area of the dihydrate DSG particles, but Rennin teaches a specific surface area of $0.2\text{-}0.65\text{ m}^2/\text{g}$ (which overlaps with the claimed range (MPEP 2144.05(I)) for the calcined hemihydrate gypsum material (p. 13 second full paragraph), and it would have been obvious to utilize this surface area for the dihydrate DSG particles in order to achieve improved water demand and mixing properties prior to discharging the slurry (p. 9 fourth full paragraph). Additionally or alternatively, Deleuil teaches utilizing a specific surface area of $0.1\text{-}0.4$

m²/g (which overlaps with the claimed range (MPEP 2144.05(I)) for a similar gypsum material in order to readily optimize the required moisture levels in a slurry of the gypsum product (4:19-30), and it would have been obvious to incorporate this surface area into the Rennen method because (a) both Rennen and Deleuil teach that the surface area of gypsum is a result-effective variable which influences moisture demand when forming wallboard materials, or (b) Deleuil establishes that this surface area is conventionally used and is obviously substitutable for the unspecified surface area of the Rennen materials.

Rennen teaches forming a lightweight gypsum board (p. 5 first paragraph). Rennen does not appear to explicitly disclose the particle size distribution of the dihydrate DSG particles, but Deleuil teaches that the particle size distribution for a similar gypsum material is preferably 20 to 100 microns (which falls within the claimed range (MPEP 2144.05(I)) in order to provide a low apparent density to the final product (4:46-58). It would have been obvious to incorporate the particle size distribution taught by Deleuil into the Rennen method because Rennen already teaches forming a lightweight gypsum board, and the Deleuil teaching would have helped to accomplish this by lowering the density of the final product.

14. As to claim 19, Rennen teaches that existing gypsum wallboard is crushed to a suitable size and added to the slurry (p. 13 first full paragraph), which implicitly provides additional bulk and improves the acoustic properties of the wallboard.

Response to Arguments

15. Applicant's arguments, see Remarks pp. 10-13, filed 19 January 2011, with respect to the rejection(s) of claim(s) 1 and 13 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rennen (EP 0344430).

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATUL KHARE whose telephone number is (571)270-7608. The examiner can normally be reached on Monday-Thursday 7:30 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ATUL KHARE/
Examiner, Art Unit 1742

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1742